FORT DRUM SOLAR WALL PROJECT

Transpired air preheat collectors in a cold weather application

PROJECT SCOPE

- 27Buildings
  - Warehouses, Motor pools, Vehicle maint shops, Shops, Gym
  - Emphasis on buildings with no ventilation
  - Installed cost $ 2.685 M
- 39 solar walls
  - 110,947 sq ft of solar wall area
  - 3 colors , black, medium bronze, rocky grey
- 74 make up air ventilation fans
  - Tie into existing ventilation systems where possible

Test Building T-91 Shop

- National Renewable Energy Laboratory (NREL) will be monitoring one shop building (T-91) to measure performance and heat collected over this heating season and next year.
- Testing will commence 2 Feb 2006
- Parameters include:
  - Collector temperatures
  - Indoor Temperatures
  - Fan cfm, run time and fan power
  - Solar radiation
  - Wind speed
  - Infrared imaging of solar wall

Construction of the Solar Wall

START OF FRAMING

CONTINUATION OF FRAMING

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Tool Room Wall

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TOOL ROOM READY FOR PANELS

TOOL ROOM COMPLETED

MAIN BUILDING COMPLETED

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FAN IN PLACE LESS DUCT WORK

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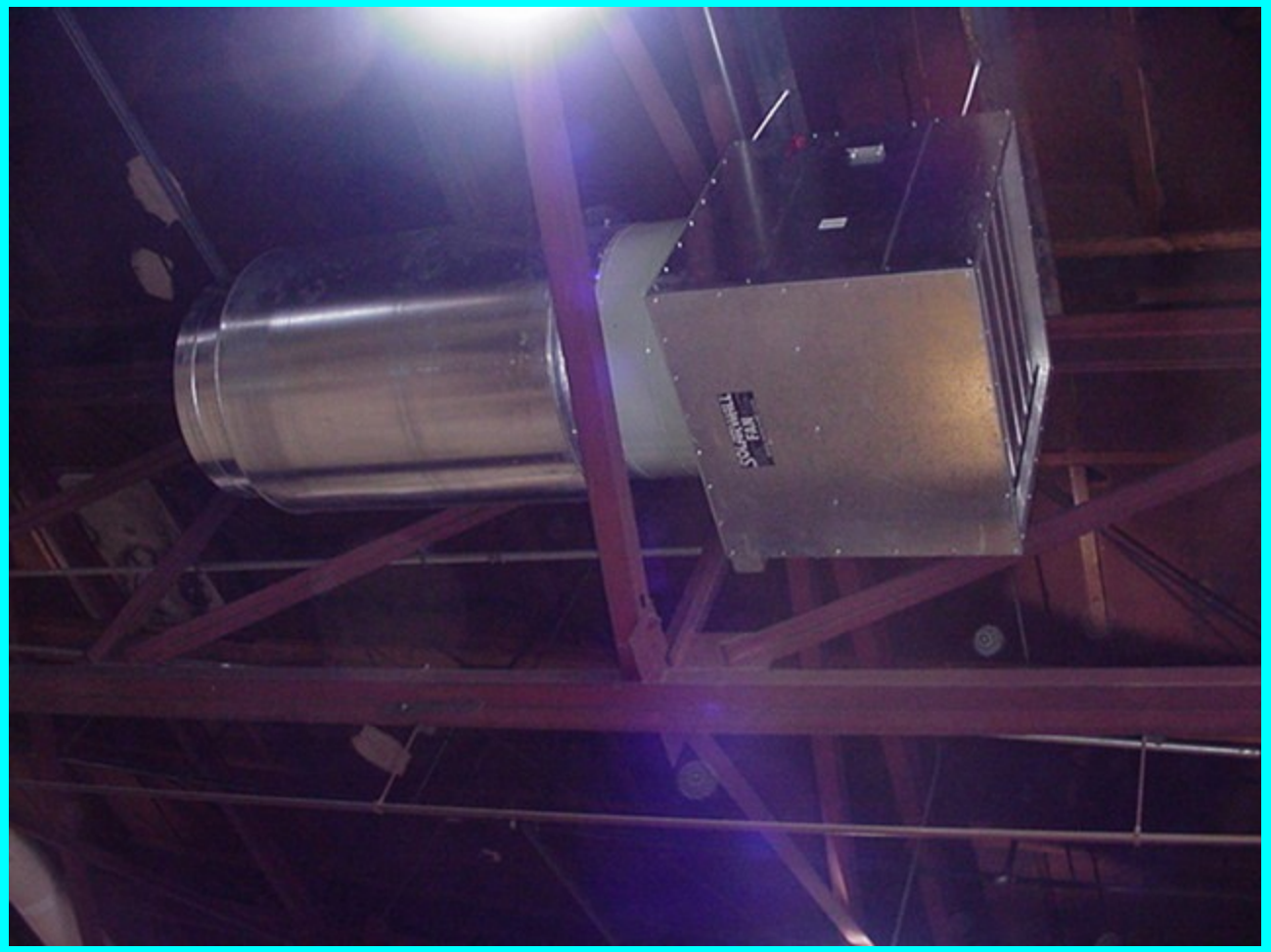

FAN WITH FLEXIBLE DUCT WORK

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FAN WITH DUCTWORK

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INLET DUCTING

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CONTROL PANELS MAIN BAYS

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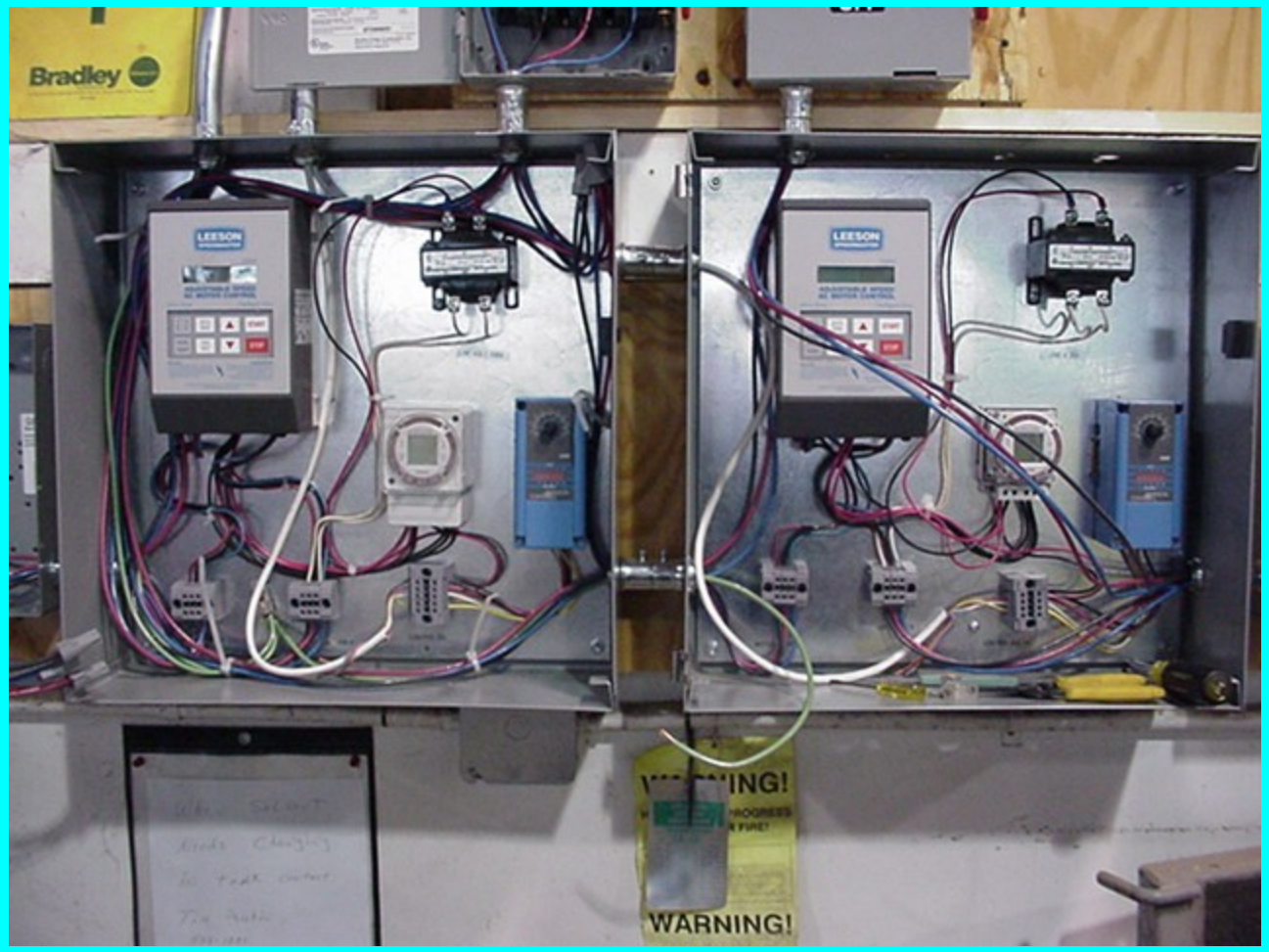
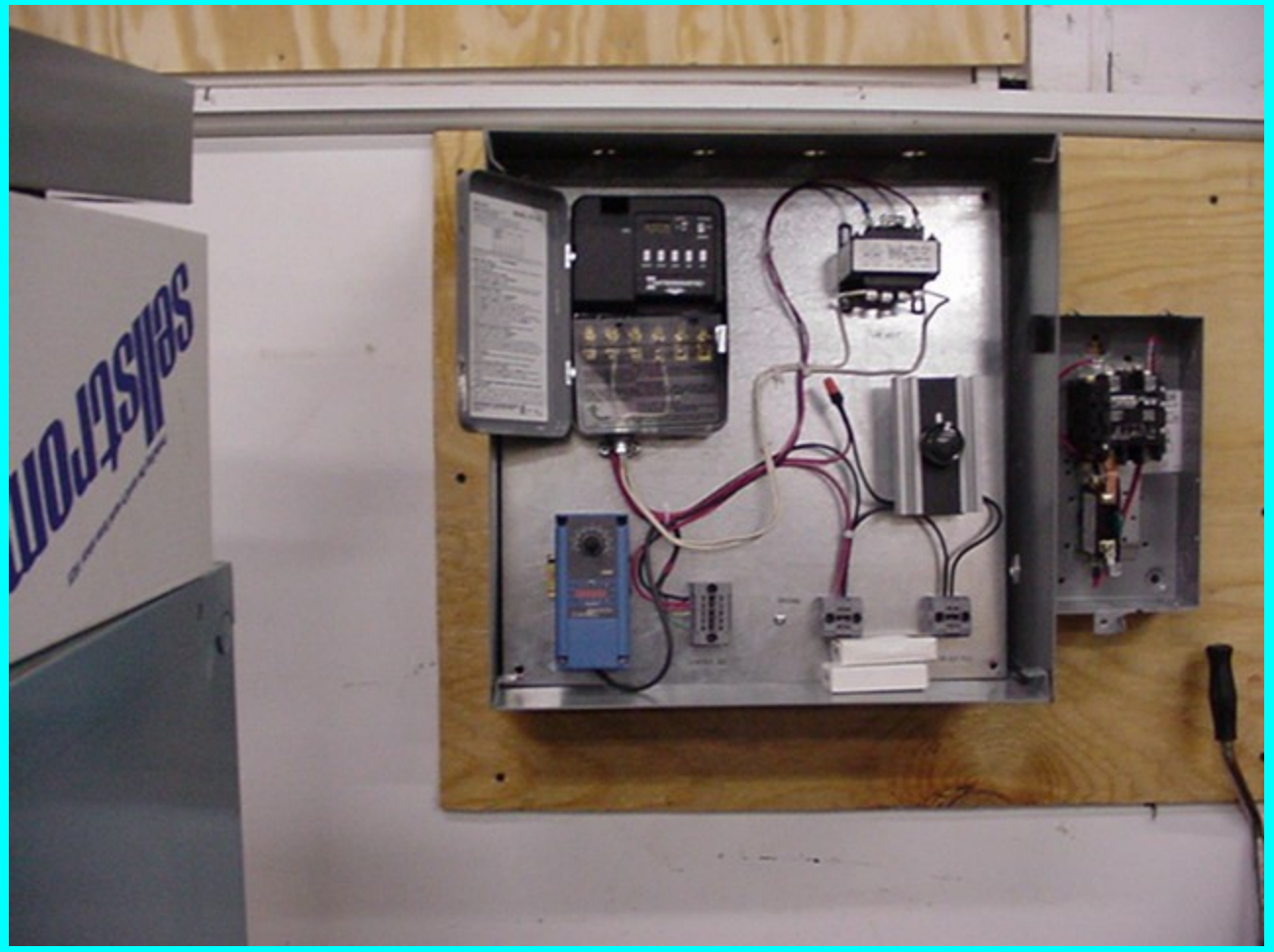


CONTROL PANEL TOOL ROOM



APPLICATION RECCOMENDATIONS

1. Building type
   a. Facilities requiring copious ventilation
   b. Look for areas of outdoor pollution
   c. Masonry, metal skin
2. Color and Visual Impact
   a. Architectural theme a consideration
3. Fan Selection
   a. Belt Driven
   b. Direct Drive
4. Controls
   a. Simple, time clock operated
   b. Tie into DDC controls for better control
   c. Heating during weekend setback, summer cooling